

## 37AHB Series Hydronic Furnace

Part of the Rinnai Tankless Heating System

**PATENT PENDING**



### FEATURES

- Four models covering a range of heating capacities
  - 27,100 to 96,300 BTU/hour
- Multi-position (upflow, downflow, horizontal left, horizontal right) without modifications \*
  - Modifiable for side-entry return air
- Low-flow, high-head pump custom designed to work with Rinnai's tankless water heaters
- Integrated control board with learning algorithm
- No combustion air infiltration losses when used with a Rinnai tankless water heater
- Four selectable heat blower off delay times
- Multi-speed motors (ECM)
- Strong 20-gauge steel cabinet
  - Galvanized, painted
  - Fully insulated cabinet
  - Low 34 inch profile
- Multi-position control box
- Designed for serviceability
- Schrader valves to purge air from the system
- Integral filter rack with filter
- Fan motor with ECM technology

\* NOTE: The unit is not designed to be installed on its back or face down.

The optimum in hydronic technology, the newly designed Rinnai® multi-position hydronic furnaces offer a unique solution for a wide variety of small- and medium-sized residential and light commercial applications. They are compact and ready to fit in tight spaces which may include, but not limited to, attics, basements, closets, crawlspaces, and utility rooms.

### Intelligent Microprocessor Controller

The 37AHB units are equipped with an intelligent microprocessor control that allows for domestic hot water priority and adapts to available hot water flow for space heating by automatically regulating the pump and fan sequence to maximize comfort.

### Fine Tuned to Work with Rinnai Tankless Water Heaters

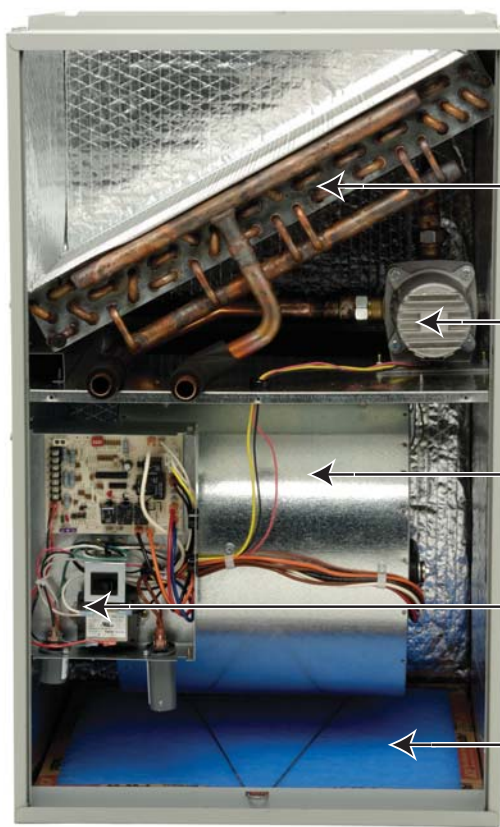
These unique hydronic furnaces are designed to work in combination with our line of Rinnai® tankless water heaters to deliver heating capacities that cover a wide spectrum of residential and light commercial heating applications. When combined, the units form the Rinnai Tankless Heating System, the first matched, tankless hydronic heating solution in the industry!



This product is manufactured in a facility registered by UL to ISO 9001.

600000060 (7/2010)

### Equipment



**CABINET**

20 gauge  
prepainted  
galvanized steel  
fully insulated

**HEAT  
EXCHANGER**

copper tube  
aluminum fin

**PUMP**

high-head  
low-flow  
integrated check valve

**BLOWER  
ASSEMBLY**

multi-speed motor (ECM)

**CONTROL  
BOARD**

integrated  
microprocessor based

**FILTER**

### Accessories



**THERMOSTATS**

Programmable, 5-2 days;  
both A/C and heat pump  
versions



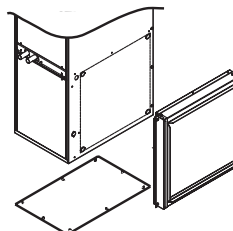
**FLOW SENSOR \***

For domestic hot water priority  
\* Supplied with the unit



**ANTI-SCALD MIXING  
VALVE**

To maintain safe domestic  
hot water temperature



**FILTER RACK  
and BOTTOM FILL PLATES**

For modification to allow side-entry  
return airflow

Factory available from Rinnai

Optional Equipment

FIELD-SUPPLIED ACCESSORIES capable of interfacing with the Rinnai Hydronic Furnace:

- Humidifier (HUM)

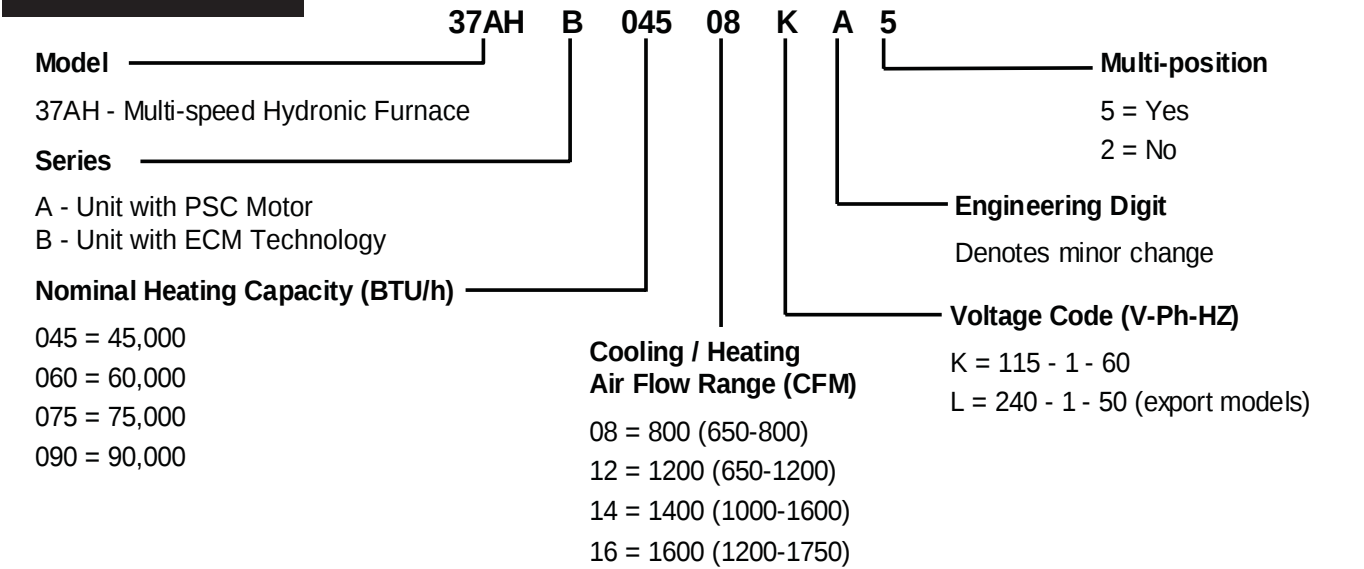
Connect an auxiliary 2.5 FLA, 2.5 LRA @ 115 VAC max Humidifier. Connections are made via the "HUM" quick connects. The humidifier output is on whenever a heating demand is being satisfied. The contacts of this output are isolated to allow application of 24 VAC or 115 VAC to one terminal and the humidifier load to the other.
- Electronic Air Cleaner (EAC)

Connect an auxiliary Electronic Air Cleaner; rating shall be max 1.0 Amp @ 115 VAC. This output is energized whenever any of the four blower speeds are energized. Connections are made via 0.250 x 0.032" male quick connect terminals labeled "EAC" and "N3".
- UV Lamp

Connect an auxiliary UV lamp (if required); rating shall be max 1.0 Amp @ 115 VAC. This output is energized whenever any of the four blower speeds are energized. Connections are made via 0.250 x 0.032" male quick connect terminals labeled "UV" and "N2".
- Cooling Coil

Can accomodate most brands of evaporator A-coil for cooling applications.

Nomenclature



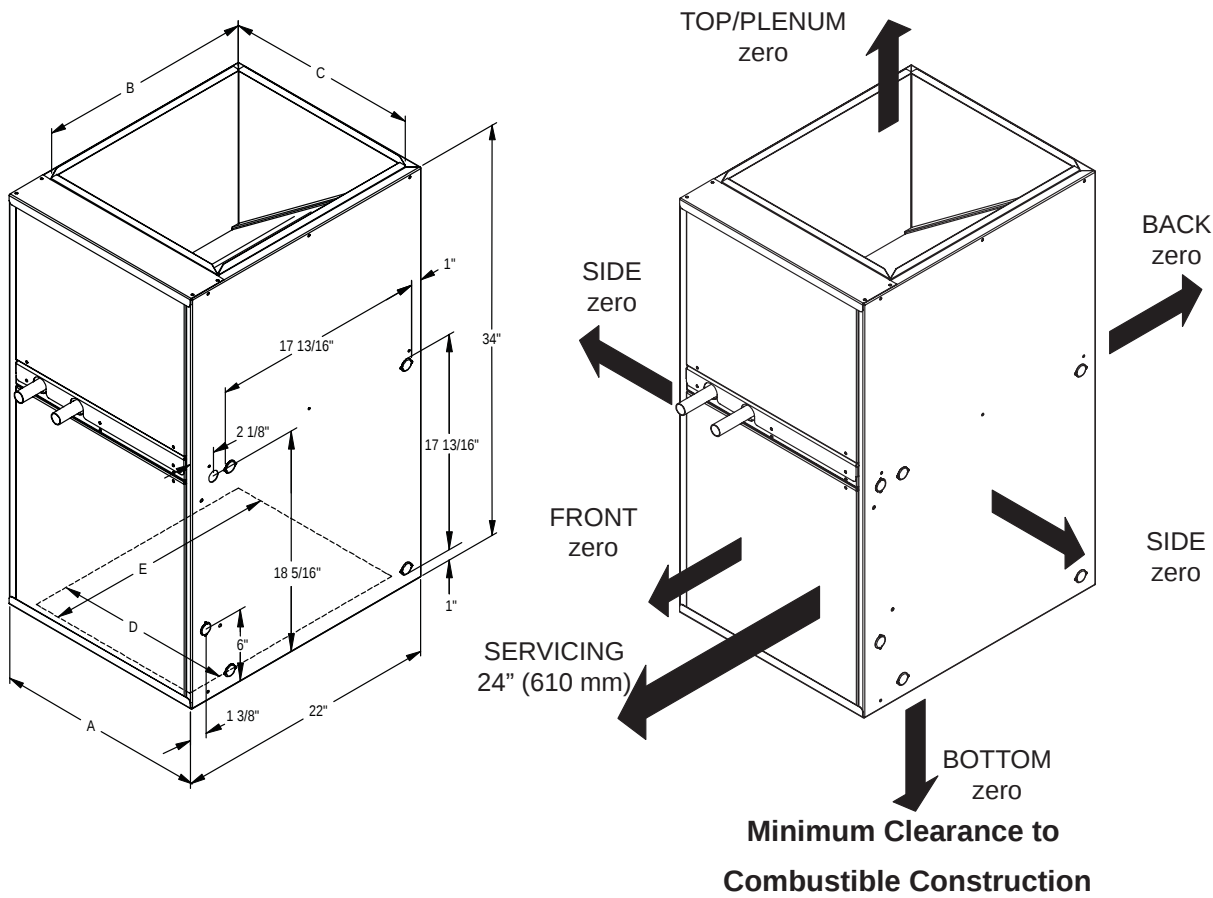
Heating Capacities

Nominal heating capacities as tested with Rinnai tankless water heaters. For final rated capacities refer to the Air Delivery and Performance Tables in the Operation and Installation Manual.

|        | AHB45 (BTU) | AHB60 (BTU) | AHB75 (BTU) | AHB90 (BTU) |
|--------|-------------|-------------|-------------|-------------|
| 120° F | 27,700      | 36,400      | 43,700      | 54,900      |
| 130° F | 33,300      | 45,100      | 52,900      | 63,900      |
| 140° F | 40,100      | 50,800      | 61,600      | 76,200      |
| 150° F | 47,700      | 59,700      | 70,400      | 86,600      |
| 160° F | 51,200      | 68,100      | 78,900      | 96,300      |

Dimensions

| UNIT SIZE             | A        |       | B   |       | C   |       | D          |       | E        |       |
|-----------------------|----------|-------|-----|-------|-----|-------|------------|-------|----------|-------|
|                       | in.      | mm    | in. | mm    | in. | mm    | in.        | mm    | in.      | mm    |
| 37AHB04508KA5 (AHB45) | 14       | 355.6 | 18  | 457.2 | 12  | 304.8 | 10 - 1/2   | 266.7 | 19       | 482.6 |
| 37AHB06012KA5 (AHB60) | 17 - 1/2 | 444.5 | 18  | 457.2 | 16  | 406.4 | 16 - 11/16 | 423.9 | 19 - 1/4 | 489   |
| 37AHB07514KA5 (AHB75) | 21       | 533.4 | 18  | 457.2 | 20  | 508   | 18 - 11/16 | 474.7 | 19 - 1/2 | 495.3 |
| 37AHB09016KA5 (AHB90) | 24 - 1/2 | 622.3 | 18  | 457.2 | 24  | 609.6 | 21 - 1/8   | 536.6 | 19       | 482.6 |



Warranty

Parts: 5 years \* / Labor: 1 year \*

\* In order to receive full warranty coverage on the Hyrdronic Furnace when connected to any other type or brand of product other than a Rinnai tankless water heater, the flow rate through the Hydronic Furnace must not exceed a maximum of 5 GPM.

Rinnai will repair or replace the covered product or any part or component that is defective in materials or workmanship as set forth.

Rinnai will pay reasonable labor charges associated with the repair or replacement of any such part or component.

All repair parts must be genuine Rinnai parts. All repairs or replacements must be performed by an individual or servicing company that is properly trained, state qualified or licensed to do the type of repair.

### Air Delivery

| NOMINAL AIR DELIVERY CHART (BOTTOM OR SIDE RETURN w/ FILTER) |                  |                                             |                                |      |      |      |      |      |      |      |      |      |      |
|--------------------------------------------------------------|------------------|---------------------------------------------|--------------------------------|------|------|------|------|------|------|------|------|------|------|
| UNIT SIZE                                                    | ECM SPEED<br>TAP | SUPPORTS<br>COOLING<br>CAP. RANGE<br>(TONS) | External Static Pressure (ESP) |      |      |      |      |      |      |      |      |      |      |
|                                                              |                  |                                             | 0                              | 0.1  | 0.2  | 0.3  | 0.4  | 0.5  | 0.6  | 0.7  | 0.8  | 0.9  | 1.0  |
|                                                              |                  |                                             | AIRFLOW (CFM)                  |      |      |      |      |      |      |      |      |      |      |
| 37AHB045 with<br>RC98HP, RC80HP,<br>R94LS, R75LS, or<br>V53i | TAP 3 (H)        | 2.0                                         | 948                            | 921  | 891  | 868  | 841  | 819  | 795  | 772  | 701  | 596  | 567  |
|                                                              | TAP 4 (M)        | 2.0                                         | 921                            | 891  | 864  | 836  | 812  | 788  | 768  | 742  | 699  | 594  | 559  |
|                                                              | TAP 5 (L)        | 1.5                                         | 803                            | 768  | 740  | 712  | 682  | 652  | 628  | 596  | 569  | 541  | 510  |
|                                                              |                  |                                             |                                |      |      |      |      |      |      |      |      |      |      |
| 37AHB060 with<br>RC98HP, RC80HP,<br>R94LS, R75LS, or<br>V53i | TAP 1 (H)        | 3.0                                         | 1343                           | 1318 | 1296 | 1270 | 1248 | 1225 | 1197 | 1168 | 1109 | 1025 | 889  |
|                                                              | TAP 2 (MH)       | 2.5                                         | 1148                           | 1128 | 1103 | 1072 | 1045 | 1012 | 984  | 955  | 937  | 908  | 690  |
|                                                              | TAP 4 (ML)       | 2.0                                         | 971                            | 942  | 911  | 880  | 847  | 817  | 784  | 751  | 715  | 680  | 642  |
|                                                              | TAP 5 (L)        | 1.5                                         | 844                            | 810  | 777  | 734  | 698  | 665  | 626  | 581  | 533  | 504  | 466  |
| 37AHB075 with<br>RC98HP, RC80HP,<br>R94LS, or R75LS          | TAP 1 (H)        | 4.0                                         | 1700                           | 1666 | 1635 | 1604 | 1576 | 1543 | 1518 | 1492 | 1465 | 1430 | 1402 |
|                                                              | TAP 2 (MH)       | 3.5                                         | 1561                           | 1524 | 1490 | 1456 | 1428 | 1396 | 1364 | 1330 | 1230 | 1265 | 1224 |
|                                                              | TAP 3 (ML)       | 3.0                                         | 1391                           | 1350 | 1320 | 1281 | 1245 | 1209 | 1190 | 1131 | 1090 | 1064 | 1031 |
|                                                              | TAP 4 (L)        | 2.5                                         | 1222                           | 1174 | 1140 | 1100 | 1063 | 1014 | 979  | 937  | 887  | 829  | 777  |
| 37AHB090 with<br>RC98HP, RC80HP,<br>R94LS, or R75LS          | TAP 1 (H)        | 5.0                                         | 1934                           | 1889 | 1857 | 1818 | 1784 | 1750 | 1715 | 1680 | 1568 | 1491 | 1377 |
|                                                              | TAP 2 (MH)       | 4.0                                         | 1777                           | 1732 | 1694 | 1650 | 1630 | 1592 | 1553 | 1517 | 1464 | 1441 | 1361 |
|                                                              | TAP 3 (ML)       | 3.5                                         | 1573                           | 1530 | 1490 | 1448 | 1417 | 1372 | 1327 | 1293 | 1253 | 1221 | 1175 |
|                                                              | TAP 4 (L)        | 3.0                                         | 1400                           | 1351 | 1317 | 1275 | 1225 | 1183 | 1134 | 1095 | 1053 | 1011 | 951  |

### Specifications

| UNIT MODELS                                                                        |  | 37AHB04508KA5       | 37AHB06012KA5                                                                               | 37AHB07514KA5 | 37AHB09016KA5 |                 |
|------------------------------------------------------------------------------------|--|---------------------|---------------------------------------------------------------------------------------------|---------------|---------------|-----------------|
| Trade Name                                                                         |  | AHB45               | AHB60                                                                                       | AHB75         | AHB90         |                 |
| RATING AND PERFORMANCE                                                             |  | Descriptor (Typ.)   |                                                                                             |               |               |                 |
| Nominal Output Capacity (BTU/h) †                                                  |  | 45,000              | 60,000                                                                                      | 75,000        | 90,000        |                 |
| Air Side Temperature Rise Rate in °F<br>(68°F Entering Air @ 150°F Entering Water) |  | Heat Speed          | 50                                                                                          | 50            | 50            |                 |
| External Static Pressure                                                           |  | (in. W.C.)          | 0 to 1.0                                                                                    | 0 to 1.0      | 0 to 1.0      |                 |
| Nominal Airflow (CFM)                                                              |  | Heating             | 800 ±                                                                                       | 1200 ±        | 1400 ±        |                 |
|                                                                                    |  | Cooling Range       | 650 - 800                                                                                   | 650 - 1200    | 1000 - 1600   | 1200 - 1750     |
| ELECTRICAL                                                                         |  |                     |                                                                                             |               |               |                 |
| Power Supply                                                                       |  | V - HZ - PH         | 115-60-1                                                                                    |               |               |                 |
| Minimum Circuit Ampacity                                                           |  | MCA                 | 9.6                                                                                         | 9.6           | 12.43         | 16.2            |
| Max. Rating of Overcurrent Protective Device                                       |  | MOP (Calculated)    | 13.6                                                                                        | 13.6          | 18            | 23.7            |
| Maximum Fuse or CKT BKR Size                                                       |  | Amps                | 15                                                                                          | 15            | 20            | 25              |
| Transformer (24V)                                                                  |  |                     | 40 VA (Primary: 120 VAC / Secondary: 24 VAC)                                                |               |               |                 |
| Printed Circuit Board                                                              |  | PCB                 | INTEGRAL (with connections for A/C system, UV lamp, Humidifier, and electronic air cleaner) |               |               |                 |
| CONTROLS                                                                           |  |                     |                                                                                             |               |               |                 |
| Available Unit Configurations                                                      |  | A/C or HP           | Dip Switch Selectable (SW1)                                                                 |               |               |                 |
|                                                                                    |  | Single or Two Stage | Dip Switch Selectable (SW1)                                                                 |               |               |                 |
|                                                                                    |  | FS or WH            | Shunt Selectable (P-7)                                                                      |               |               |                 |
| Safety Door Switch                                                                 |  | Rated Voltage       | 125 VAC                                                                                     |               |               |                 |
|                                                                                    |  | Resistive Load      | 21 Amp                                                                                      |               |               |                 |
| Blower Off Delay                                                                   |  | HTG/CLG             | Dip-switch Selectable/Fixed 30 Sec                                                          |               |               |                 |
| Cool / Heat Blower On Delay                                                        |  | Varies              | Cool: 1 second / Heat: 25 seconds (see Sequence of Operations)                              |               |               |                 |
| INDOOR BLOWER MOTOR                                                                |  |                     |                                                                                             |               |               |                 |
| Type                                                                               |  |                     | DIRECT DRIVE MOTOR (ECM)                                                                    |               |               |                 |
| Motor HP                                                                           |  |                     | 1/2                                                                                         | 1/2           | 3/4           | 1               |
| Motor (Full Load Amps)                                                             |  | FLA                 | 6.2                                                                                         | 6.2           | 8.5           | 11.5            |
| Run Capacitor                                                                      |  | mfd/volts           | N/A                                                                                         |               |               | N/A             |
| Volts-PH-HZ                                                                        |  |                     | 115-1-60                                                                                    |               |               |                 |
| CIRCULATING PUMP                                                                   |  |                     |                                                                                             |               |               |                 |
| Type                                                                               |  |                     | Wet Rotor                                                                                   |               |               |                 |
| Volts-PH-HZ                                                                        |  |                     | 115-1-60                                                                                    |               |               |                 |
| Motor (Full Load Amps/Locked Rotor Amps)                                           |  | FLA/LRA             | 1.8 / 2.6                                                                                   |               |               |                 |
| Pump Motor HP                                                                      |  |                     | 1/8                                                                                         |               |               |                 |
| Run Capacitor                                                                      |  | mfd/volts           | 14/250                                                                                      |               |               |                 |
| Maximum Working Pressure                                                           |  | PSI                 | 125                                                                                         |               |               |                 |
| Min/Max Fluid Temperature                                                          |  | °F (°C)             | 120 (49) / 160 (71)                                                                         |               |               |                 |
| HYDRONIC HEATING COIL                                                              |  |                     |                                                                                             |               |               |                 |
| Coil Construction                                                                  |  |                     | 3/8" OD copper tubes, aluminum fins, galvanized steel frame                                 |               |               |                 |
| Rows...Fins/In                                                                     |  |                     | 2...16                                                                                      | 2...16        | 3...14        | 3...15          |
| Total Face Area                                                                    |  | Sq. Ft.             | 2.3                                                                                         | 2.6           | 2.8           | 3.3             |
| Approximate Internal Volume                                                        |  | Gallons             | 0.47                                                                                        | 0.53          | 0.86          | 1.02            |
| PIPING CONNECTIONS - (QTY)                                                         |  |                     |                                                                                             |               |               |                 |
| Type                                                                               |  |                     | Copper Stubs                                                                                |               |               |                 |
| Supply Diameter                                                                    |  | Inches              | (1) 3/4                                                                                     |               |               |                 |
| Return Diameter                                                                    |  | Inches              | (1) 3/4                                                                                     |               |               |                 |
| RETURN-AIR FILTERS                                                                 |  |                     |                                                                                             |               |               |                 |
| Filter Type (Throwaway)                                                            |  | Inches ††           | 12 X 20 X 1                                                                                 | 16 X 20 X 1   | 20 X 20 X 1   | (2) 12 X 20 X 1 |
| UNIT WEIGHT                                                                        |  |                     |                                                                                             |               |               |                 |
| Shipping                                                                           |  | lbs                 | 92                                                                                          | 109           | 118           | 136             |
| Installed (with water)                                                             |  | lbs                 | 107                                                                                         | 127           | 138           | 159             |

† Tested in accordance with ANSI/ASHRAE Standard 37-Latest edition.

‡ Airflows shown are nominal (blower speeds are factory set). For air delivery other than stated, refer to the Air Delivery & Performance table.

†† Required filter sizes shown are based on the larger of the AHRI (Air Conditioning & Refrigeration Institute) rated cooling airflow or the heating airflow velocity of 300 ft/min for throwaway type or 450 ft/min for high-capacity type.

Side intake filter to be (1) 20"x20"x1" typical for all models.

Air filter pressure drop for non-standard filters must not exceed 0.08 in. wg.

This product is manufactured in a facility registered by UL to ISO 9001.

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